



MIDDLE TENNESSEE CHAPTER NEWSLETTER

September 2006
Vol. 1, Issue 9

In This Issue

- Letter from the Chair - Kim Shinn
- Building Outside the Box
- Dr. Gwen Griffith
- A Call to Action
- Fernando Rodriguez
- Green News from Around Town
- GREENROOFS: Stormwater Best
Management Practice
- Kimberly Moore
- Building Toward a Sustainable Future
- Ann Olsen
- Green Tie Gala
- LEED for New Construction

Calendar

- **September 28th** (Lunch time meeting from 11:30 to 1:00) - Sustainable Design for Residential
- **October 26th** Green Tie Gala - Speaker: Rick Fedrizzi
- **November/December** - No Meeting



Letter from the Chair -Kim Shinn

I know I'm supposed to stick with the theme for the year – Busting the Cost Myth! But I've been getting distracted lately...

The USGBC is going through a bit of a reorganization these days. Chapters are becoming much more important. USGBC likes to call us their “front doors” – the local friendly face of green building. And as chapters become more numerous (there are more than 70 today – there were only a couple dozen when the Middle Tennessee interest group first got together in late 2002) the USGBC has decided that communications between chapters is becoming more important. To help out with that communication, the chapters have formed into regions, based, as much

as anything, on bio-regionalism. Our region, the South East, includes chapters in Arkansas, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Southwest Virginia, Kentucky, and Tennessee. Leaders from each of the fourteen chapters have started to meet with one another and share stories of student chapters, best practices and successes in legislative action – and a few less-than-successful stories as well. One of the things we cooperated on was the first of a series of informational feedback sessions for the development of the next major version of LEED, where focus groups were able to brainstorm and provide new ideas for what “LEED – The Next Version” should look like. Another of the big things that got batted around was the need to regionalize LEED – LEED for the Southeast, if you will. We are also starting to consider

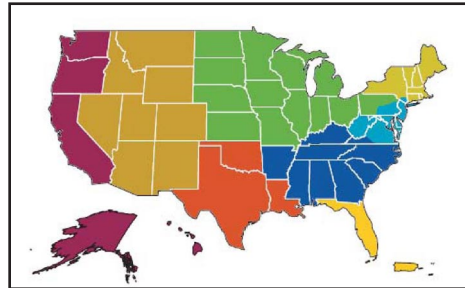
regional green building conferences – not to compete with GreenBuild, but to complement it, especially for folks who can't afford to go all the way to Denver or Los Angeles for a week.

The USGBC is also putting forward a Call to Action. All USGBC members are urged to be more proactive in stemming the tide of climate change, and reducing our individual contributions to global warming. Please take a few minutes to check out the USGBC

Board's Resolution on Climate Change - <http://www.usgbc.org/News/USGBCNewsDetails.aspx?ID=2506>. Follow-up on the “Wingspread Principles”, too. You'll be hearing a lot more about these in the coming months. The Board has committed the USGBC to become a carbon neutral organization. While

you are roaming around the USGBC web pages, be sure and take a look at the USGBC's Guiding Principles:

1. Promote the triple bottom line: USGBC will pursue robust triple bottom line solutions that clarify and strengthen a healthy and dynamic balance between environmental, social and economic prosperity.
2. Establish leadership: USGBC will take responsibility for both revolutionary and evolutionary leadership by championing societal models that achieve a more robust triple bottom line.
3. Reconcile humanity with nature: USGBC will endeavor to create and restore harmony between human activities and natural systems.



New USGBC regions





Letter from the Chair

-Kim Shinn

continued

Officers

Kim E. Shinn
-Chairman

Mike Leonard
-Vice Chair

Steve Grant
-Treasurer and Finance
Chair

Fernando Rodriguez
- Secretary

James Qualk
-Communications Chair

Anne Barronton
-Sponsorship Chair

Rick Cottle
-Membership Chair

Mark L. Smith
-Public Policy Chair

Paul McCown
-Fundraising Events
Chair

Keith Loiseau
-Emerging Green
Builders Chair

Dan Huitt
- Programs Chair

Winston Huff
- Newsletter Editor

Brandi Sanders
- Graphic Designer

Peggy Phelps
- Copy Editor

4. Maintain integrity: USGBC will be guided by the precautionary principle in utilizing technical and scientific data to protect, preserve, and restore the health of the global environment, ecosystems and species.
5. Ensure inclusiveness: USGBC will ensure inclusive, interdisciplinary, democratic decision-making with the objective of building understanding and shared commitments toward a greater common good.
6. Exhibit transparency: USGBC shall strive for honesty, openness and transparency.

Wow! What an example USGBC has set for each of us to follow, both professionally and personally. Please read Fernando Rodriguez' article on A Call to Action in this edition of the newsletter and take action yourselves!

I've also been thinking about the great year-end celebration that the Chapter is having – The Green Tie Gala on October 26. In our tradition of bringing the leaders of green building to Middle Tennessee, like David Gottfried and Bob Berkebile, our special guest and keynote speaker at the Gala will be the founding chairman, and current CEO of the USGBC, Rick Fedrizzi. We are also going to do a "Year in Review" of the accomplishments of green building in our area, and give out our first "Green Star" awards to deserving members of the local green building community. This is also a tremendous opportunity for you and your organization to support the Chapter, since this is a capacity-building event to help the Chapter reach financial stability. Please RSVP when you receive your invitation and encourage your organization to "Buy a Table" and host your friends and clients at this special event. This would also be a great opportunity to invite your state representative, senator, and/or district council representative to join us to learn more about the people, projects and energy surrounding green building in Middle Tennessee.

And I've been thinking about how interest in and support for green buildings is growing at a tremendous rate here in our area. More and more of our brother and sister organizations, like AIA, ASHRAE, IESNA, ASCE, AGC, BOMA, CSI, IFMA, NAIOP, IIDA, the Tennessee Regional Environmental Forum and the Cumberland River Compact (just to name a few) are becoming active in the field of green building design, construction and operation. USGBC Middle Tennessee will be convening a meeting of all interested organizations to coordinate our initiatives and programs

early next year. One of the Big Ideas was discussed in our August membership meeting – the creation, staffing and funding of a community green building resource center. If you are active in one of these organizations, please let a Board member know so that we can include you in the planning and organization of this Green Convocation.

If you are interested in taking a greater role in Chapter leadership and advancing the adoption of green building here in Middle Tennessee, please place your name in nomination for a Board of Directors seat in the coming elections. We are in need of greater representation from the Contractor, Corporate and Retail, Educational Institutions, Government, Insurance Companies and Financial Institutions, Nonprofit and Environmental Organizations, Product Manufacturer, Real Estate, and Utility and Energy Service Company member categories. If you aren't quite ready to take on the responsibilities of Board membership, please join one of our committees and lend a hand to growing our organization and its influence in Middle Tennessee.

Dream big. Design bold. Do good.

Kim



Rick Fedrizzi to speak at the Nashville USGBC Chapter Green Tie Gala



Building Outside the Box: Sustainable Building for Water & Energy

Dr. Gwen Griffith, Project Director

Cumberland River Compact

Rainfall is both a resource and a challenge to our rivers and streams. When it sinks into the ground, it is filtered and provides the steady recharge that keeps our streams flowing and alive year round. When it runs off quickly from roofs and roads into storm drains, it carries pollutants with it, creates flash floods and scours stream banks. This is followed by drought and dry stream beds in subsequent dry weather.

Sustainable building and conservation site design practices help overcome these storm runoff problems associated with man made structures. There are several approaches to draw upon for this, including better site design, low impact development, and integrated stormwater design. All of these approaches have the common goal of mimicking the natural pre-development hydrology of a site with design that promotes maximum infiltration of rain water back into the ground, keeping it on site for filtration and slow baseflow release back into the streams.

Energy and resource conservation are also critical elements to sustainable building practices. In fact, the water-energy nexus is becoming more evident all the time as research into green building progresses. In the south-east, where the majority of our power comes from coal-fired power plants, every kilowatt hour of electricity generated requires the use of about 25 gallons of water from our rivers. In Tennessee the average house uses 1200 kilowatt hours per month, or roughly 30,000 gallons of water to provide our electricity each month. Generating power also impacts rivers and water quality through dams that disrupt aquatic life cycles and air pollutants that are deposited in the water, such as mercury and acid rain. In terms of potable water sources, significant energy is required to cleanup water for drinking and industrial uses and then additional energy is used to treat sewage water after it has been used by homes and businesses. Therefore, water conservation is also energy conservation, and both can bring significant savings to individuals, businesses and municipalities.

The Cumberland River Compact is a non-confrontational, not-for-profit organization dedicated to enhancing the water quality of the Cumberland River and its tributaries through education and by promoting cooperation among citizens, businesses, and agencies in Kentucky and Tennessee.

BOB Project Review

Realizing this intimate connection between water and energy, the Cumberland River Compact launched the Building Outside the Box (BOB) project in 2003. The goal of BOB is to demonstrate cost effective sustainable building practices for residential construction that can transform rainfall from a problem back into a resource and conserve water, energy, and natural resources to benefit builders, homeowners, and communities.

Key Sustainable building goals for BOB residential demonstrations:

- ◆ Minimum impervious cover
- ◆ Maximum rainfall infiltration
- ◆ Wide riparian buffer zones
- ◆ Native plantings and water conservation
- ◆ Energy star homes and appliances
- ◆ EarthCraft House certification
- ◆ Low VOC products for indoor air quality
- ◆ Education for builders, homeowners, and farmers on saving energy and water

Expanding from educational conferences in 2001-02 into on-the-ground projects in 2003, the BOB project has tapped into an extensive network of clean water partners that have made it possible to bring model practices to four BOB sites in three subwatersheds in the Basin. Thanks to an EPA watershed initiative grant and the efforts of our many partners, BOB has grown from three sites to four, and the scope of the project has greatly expanded. The original plan called for three model homes, each adjacent to an impaired stream. When completed, the influence of the BOB project will expand to bring better site design features to three residential sites and high performance house construction to over one thousand homes. The sites vary in location and type in order to show a range of applications of green building practices.



Building Outside the Box: Sustainable Building for Water & Energy

Dr. Gwen Griffith, Project Director

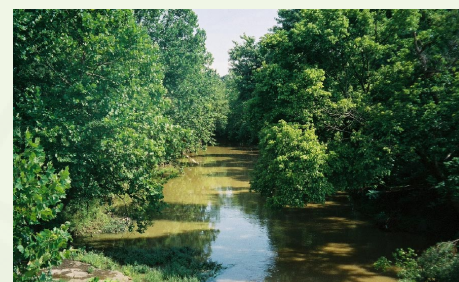
Cumberland River Compact

continued

- ◆ **Morgan Park Place** is an urban infill site in the Germantown historic district of downtown Nashville. On this site, Lawrence Brothers and New Urban Construction are building a 73 unit, mixed use development. All the units will be EarthCraft House certified, the first multi-family development in the state to accomplish that designation. The first units have been completed and certified with outstanding rating scores. A well attended open house in July 2006 generated strong interest in home buyers for the energy and water saving features of the new units. In addition to extensive insulation and sealing of the HVAC systems, some of the key features of the site include: 1) state-of-the-art drip irrigation system that will save 50,000 gallons of water in each summer month; 2) use of rain gardens and pervious parking areas to treat stormwater runoff; 3) insulated concrete form walls on the ground floor providing extensive energy efficiency and safety; and 4) high efficiency appliances that will save 1.7 million gallons of water per year in those 73 units over standard appliance water use.
- ◆ **Quiet Creek** is an 84 unit single family home development by Affordable Housing Resources, being built along a tributary to Mill Creek in Antioch, southeast Nashville. This site incorporates a certified EarthCraft House plus better site design features in the 9-acre phase two area of the site. Features in the EarthCraft House include: 1) house envelope sealed with Icynene spray foam insulation; 2) a sealed and insulated crawl space; 3) sealed and insulated roofline, and 4) low VOC paint and carpet. The site design will incorporate an innovative bioretention zone and additional grassy swales and infiltration zones to treat stormwater runoff. Following an economic analysis, it is hoped that the 38 houses on the phase two area can all become EarthCraft certified houses.
- ◆ **Highlands at Ladd Park** is a 620-acre, suburban upscale single family home development in Franklin, TN. The developers with Trillium Ventures are committed to low impact development and high performance home construction. They hope to actually improve the water quality in the two streams on site that flow into the Harpeth River. The site features will include: 1) over 40% open space with natural prairie restoration; 2) extensive stream restoration with native riparian zone plantings to correct decades of cattle impacts; 3) 7-10 miles of walking trails; and 4) incorporation of extensive low impact site design features such as bioretention zones, grassy swales and pervious parking areas. The BOB project is actively working to encourage builders on the site to embrace the EarthCraft House program so that the 1000 plus homes all achieve certification.
- ◆ **The Campbell Farm** is a 200-acre farm site in Logan County, Kentucky along the banks of Pleasant Grove Creek, a tributary to the Red River. This rural site will incorporate farm best management practices and stream restoration to enhance this impaired stream that is hqwome to highly significant aquatic biodiversity. Practices to be put in place include: 1) streamside fencing to prevent cattle access; 2) repair of erosion gullies from adjacent crop fields; 3) barn roof runoff collection and cistern system for use as cattle watering and crop spraying; and 4) stream bank restoration work.



Morgan Park Place, Historic Germantown, Nashville, TN



Mill Creek - Antioch, Nashville, TN



Future site of Highlands at Ladd Park, Franklin, TN



Campbell Farm, Logan County, KY.

EarthCraft House - Southface Energy Institute

The EarthCraft House program has been a very important partner to the Compact in the BOB project. The Southface Energy Institute is the nonprofit home for the EarthCraft House program. Located in Atlanta and working with the Greater Atlanta Homebuilders Association, the program has inspected and certified nearly 4000 homes in the Atlanta area. There



Building Outside the Box: Sustainable Building for Water & Energy

Dr. Gwen Griffith, Project Director

Cumberland River Compact

continued

are many Georgia builders who only build EarthCraft Houses now because of the higher quality, lower liability, and enhanced market share they enjoy with these high performance homes. The Atlanta Habitat for Humanity also builds exclusively EarthCraft Houses now too!

The EarthCraft House program operates with a menu of construction options, similar to the way the LEED program works. Builders must achieve 150 points total from the criteria list with at least 75 in the energy sector. Participating builders are expected to join the EarthCraft program, be a member of the local home builders association, and take the 8 hour training workshop. Every house receives two inspections, first in the pre-drywall stage, and the final inspection upon completion, which includes both a blower door test and a duct blaster test. To become EarthCraft certified means fulfilling the necessary criteria and passing both inspections.

The beauty of the EarthCraft House program is that it is feasible and affordable for every builder, it is applicable to any house plan, and it is tailored to our mixed humid climate. Certified houses are also Energy Star qualified and achieve at least 30-40% greater energy efficiency than standard house construction. One of the key methods taught in the EarthCraft House training workshop is the use of mastic (liquid – not tape) to securely and permanently seal every joint in the heating and cooling duct system. The average duct system loses 30-40% of its air to leakage from the joints. When all joints are well sealed with mastic, and especially when the ducts are enclosed in conditioned space such as a sealed crawl space or an insulated attic, then those measures alone can reduce utility bills by 30-40%. When

you add a well insulated and sealed housing envelope to that, you've got an amazingly energy efficient house for very little extra cost to the builder. Based on thousands of houses certified in Georgia, achieving EarthCraft House certification costs only 1-3% more on average for the builder, an investment that seems well worth it for the builder and especially for the homeowner.



BOB receives Governor's Environmental Stewardship Award for Excellence in Green Building: L to R Paul Sloan (TDEC Deputy Commissioner), Don Green (City of Franklin Stormwater Coordinator), Gwen Griffith (BOB Project Director), Carol Edwards (Metro Soil Conservation) and James Fyke (TDEC Commissioner).

BOB Partnerships

By partnering with leading edge developers, architects, engineers and builders plus key organizations, the Cumberland River Compact has leveraged original BOB grant funding far beyond the original grant amount. In fact, thanks to our partners and the scope of our work, the BOB project recently was honored with the first Tennessee Governor's Environmental Stewardship Award for Excellence in Green Building. It is exciting to see the state recognize the importance of green building practices to environmental quality. This is just the begin-

ning of great projects coming to our watershed.

The USGBC Middle Tennessee Chapter has been an important partner in this work. Technical advice on the BOB Committee, key USGBC educational seminars, and helping spread the word about BOB events have all been an integral part of the work of the project. Other organizations, such as the American Institute of Architects, American Society of Landscape Architects, Natural Resources Conservation Service, Central Basin RC&D, Home Builders Association of Middle Tennessee, Vanderbilt University, Austin Peay University, and Southeast Watershed Forum have all played key partnership roles too. Utilities have also been most helpful including Nashville Electric Service, Middle Tennessee Electric, and Tennessee Valley Authority. Many consulting firms have donated considerable time and effort including AMEC Earth and Environmental; Jen Hill; Consoer, Townsend, Envirodyne; and Breedlove, Dennis and Young. Agency partners have the local, state and federal level have also made large contributions to the BOB project. Our watershed partners in the Harpeth River Watershed Association, Red River Watershed Association and the World Wildlife Fund Southeast Rivers and Streams Program have also been key allies in the education and stream restoration work being done on the three impaired rivers. None of this would be possible without our key funding partners: the U.S. EPA, TVA, and the TN Department of Agriculture. Please visit the BOB website for a complete list of partners.

The BOB educational program has also had dramatic impacts on the Basin building community. BOB has hosted three EarthCraft House training workshops so far, with over 100 builders attending. The Compact has plans to hold a fourth workshop in the fall of 2006 thanks to the sponsorship of Middle



First EarthCraft House in Tennessee – by Ascent Building Group, Murfreesboro, TN, 2005



Building Outside the Box: Sustainable Building for Water & Energy

Dr. Gwen Griffith, Project Director

Cumberland River Compact

continued

Tennessee Electric. Builders who participated in BOB trainings have constructed the very first EarthCraft House certified homes in Tennessee. In Summer 2005 Ascent Builders Group, Inc. certified the first house in Murfreesboro; and in December 2005 Lawrence Brothers, LLC certified two additional houses in Germantown District of north Nashville. The third EarthCraft House certifications are in the BOB site at Morgan Park Place. We anticipate several more to be added to this list in by the end of 2006 and many more next year. BOB also hosted a Low Impact Development training workshop and a site redesign charrette and made numerous presentations to conferences in the region. In the Fall of 2006, BOB and Dodd Galbreath, TN Dept of Agriculture, will present a 2 day intensive training on bioretention design and construction.

BOB Next Steps

The next step for the project, after completion of the on-the-ground work, is to conduct an economic analysis, evaluate the lessons learned, and pull it all together into an educational program for multiple audiences. We anticipate broader outreach to more building professionals, plus realtors, bankers, subcontractors, and the general public. In addition, we will reach out to other watershed groups that want to replicate sustainable building programs. We are currently creating a Green Building Resource Kit to meet the growing demand for information from the public, builders and community leaders. Eventually, the Compact and our partners envision a Sustainable Building Resource Center as a regional source of green building information for water friendly, energy efficient homes.

Additional Resources:

Cumberland River Compact

BOB Project:

Southeast Watershed Assistance Network (SWAN)

EarthCraft House Program

Low Impact Development

Center for Watershed Protection

www.cumberlandrivercompact.org

www.buildingoutsidethebox.org

www.watershed-assistance.net

www.earthcrafthouse.com or www.southface.org

www.lowimpactdevelopment.org

www.cwp.org



Building Outside the Box



A Cumberland River Compact Program



A Call to Action -Fernando Rodriguez

I recently saw the documentary “An Inconvenient Truth” and was shocked, saddened, and quite sobered by the statistics and video footage of the rapidly increasing reality of global warming. This movie lays out the facts of how mankind’s “thirst” for carbon-based energy (to power our built environment and our vehicles) threatens civilization as we know it. Add to this the fact that the U.S. construction industry collectively consumes approximately 37% of all energy and 68% of all electricity used in the U.S. alone. For me, this is nothing short of a call to action.

Federal, state and local governments around the country have already taken action:

- Major federal agencies including the General Services Administration, Naval Facilities Engineering Command, and the U.S. Army Corp of Engineers have mandated that all of their new construction and major renovations achieve LEED Silver certification at a minimum.
- More than 14 states have enacted green building mandates via executive order from the Governor or state law by the legislature that require all state funded buildings to be LEED Certified.
- More than 250 Mayors have signed on to the U.S. Mayors’ Climate Protection Agreement which strives to meet or exceed the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol - 7% reduction from 1990 levels by 2012 - by encouraging anti-sprawl land use policies, urban reforestation, public information campaigns, and by urging state and federal government leaders to establish a nationwide emission trading system.
- More than 14 U.S. cities and counties encourage developers and building owners to build green with incentives such as the following:
 - Density bonuses ranging from 0.15 Floor Area Ratio (FAR) for a LEED Certified project to a maximum of 0.35 FAR for a Platinum project
 - Front-of-the-Line plan review – expediting plan checks/zoning/permits for private developments seeking LEED certification
 - Tax incentives, such as Oregon’s LEED-based Business Energy Tax Credit (BETC), which provide tax credits to developers and building owners for a certain percentage of the dollars spent beyond standard practice towards energy conservation, renewable energy resources, recycling and other measures represented in LEED credits
 - Vouchers or rebates to business and homeowners for purchase of qualifying energy efficient appliances
 - Public recognition of LEED projects such as a Mayor’s Award
 - Green Building Grants that increase with level of LEED certification

Neither the State of Tennessee nor any municipality within Middle Tennessee has taken the kind of action listed above. The Advocacy Committee is working to change this, but we really need an army of advocates. Success rests in the efforts of organized, informed individuals like the collection of voices we have gathered into the Middle Tennessee Chapter. It is time for more action – the kind of action that you the reader can help the Advocacy Committee take. Take a few minutes to consider what action you will take. It could be as simple as sending an email or letter to the Governor (phil.bredesen@state.tn.us), the Mayor (mayor@nashville.gov), your City Council representative (http://www.nashville.gov/public_info/coun_districts.html) and any other local government leader that is supposed to be representing us and encourage them to stop being spectators and to start being leaders in creating a sustainable community.





Green News from Around Town

Builders Find Market By Going Green

July 30th, 2006

NASHVILLE -When homeowners tour Morgan Park Place in Germantown, they'll notice a hip live-work-play neighborhood — not the 1.7 million gallons of water conserved each year by efficient washer/dryer combos in the 73 condo units. Interested buyers who peek at plans for Terrazzo, billed as “exclusive metropolitan living” in The Gulch, will see terraces with city views and contemporary kitchens — not the 30 percent to 40 percent energy savings a “green” building yields.

Both developments are sustainable, green goddesses in the world of residential design, where eco-friendly sensibilities are as important as fancy upgrades. You can't see the savings on the surface.

But as more residents translate green to energy conservation and better air quality, sustainability looks quite attractive — and efficient.

“I love the design,” admits David McDowell, 49, who will move from his West End residence to Terrazzo when his condominium is complete in 18 months. But it was the environmental factor that helped seal the deal for him. “We need to establish new standards for development in this market, and those need to be in line with contemporary thought,” he says.

Select builders who are introducing eco-friendly building to the residential market say a show-and-tell approach will drive the green movement in Nashville.

If you build it and explain it, they will buy it. “Showing people what it means to be green is the key to the movement,” emphasizes Mike Leonard, an architect with Brentwood-based Thomas, Miller & Partners and vice chairman of the Nashville Green Building Council. “It's really a touch-and-feel thing.

Refer to the Tennessean for more information.

New Buildings Seek Eco-Friendly Certification

June 27th, 2006

NASHVILLE -A new 14-story mixed use building in Nashville's Gulch area will join the shortlist of projects seeking certification as a “green” development.

Terrazzo, a mix of condominiums, retail shops, and office space on 12th Avenue South and Division Street should be completed in fall of 2007.

Developers broke ground on the 65 million dollar project today saying they will seek certification from the U.S. Green Building Council for its energy and environmental design.

That would make Terrazzo the first residential building with such certification in Nashville.

Designers say that it will be so efficient that the bill for water, heating and cooling will only be around 60 dollars a month, but that is if you pay a mortgage of \$300,000 to \$1.5 million.

Architect Manuel Zeitlin says the eco-friendly building required extensive planning.

“The water that comes out of your air conditioning condensers probably will be used to irrigate the plants so we're not using extra water to irrigate landscaping. A lot of the materials are going to come from within 500 miles of the site so you're not wasting energy to bring materials, or you know, ship materials 2000 miles which is often the case.”

Each level of Terrazzo will have a recycling station and residents will even be able to choose the amount of water they flush with their dual valve toilets.

Only five buildings in Tennessee have earned certification from the U.S. Green Building Council. At least one dorm at Vanderbilt University and the new federal court house are among projects seeking certification in Nashville.

Low-Impact high rises might be next in Franklin

June 12th, 2006

FRANKLIN - Can the high-rise office buildings of Cool Springs ever be perceived as being environmentally benign, like a Williamson County meadow?

Probably not, but developers, nonprofits and municipalities are doing their best to bring “green building” into popularity around here.

Green building - the practice of designing structures that reduce their impact on the environment through design, construction, operation, maintenance, energy efficiency and waste removal - is slowly gaining steam throughout the U.S., and Franklin could soon see its first green buildings.

LEED Accreditation Exams:

The last day to take the current version of the LEED for New Construction, Version 2.1 of the LEED Professional Accreditation exam is October 31st, 2006. There will be a black out period early November as we transition over to the new exam tracks which we are currently scheduled to roll out Mid-November.

New Exam tracks will be:

LEED for Existing Buildings, v2.0

LEED for Commercial Interiors, v2.0

LEED for New Construction, v2.2



GREENROOFS: Stormwater Best Management Practice

-Kimberly Moore

The Metropolitan Government of Nashville and Davidson County, Tennessee, has incorporated greenroofs as a best management practice for stormwater in the revised stormwater regulations to be released to the development community.

A greenroof is a vegetated roof cover that allows the roof to provide several environmental benefits. Although modern greenroofs have only recently been embraced in urban American design, they have been used for centuries both as functional elements (to provide insulation to homes) and as amenities (to provide enjoyable “roof garden” space for city residents).

There are two classes of roof top vegetation systems: extensive and intensive. Each of these types can be further classified as accessible or inaccessible greenroofs.

Extensive systems, also known as low-profile, performance, or eco-roofs, are composed of a waterproof membrane covered with a shallow layer (4-6 inches) of growing medium and low growing vegetation.

Intensive systems, also known as high profile or roof gardens are heavier weight systems that consist of a waterproof membrane covered with a deeper layer (6 to 24 inches) of growing medium and a variety of vegetation including some deeper-rooted vegetation (even trees). Either of these types of greenroofs can be made accessible to the residents or users of a building and provide a green space and amenity to the users. However, it is more common for intensive greenroofs to be designed as accessible space, while extensive greenroofs are often only accessed for inspections and maintenance.

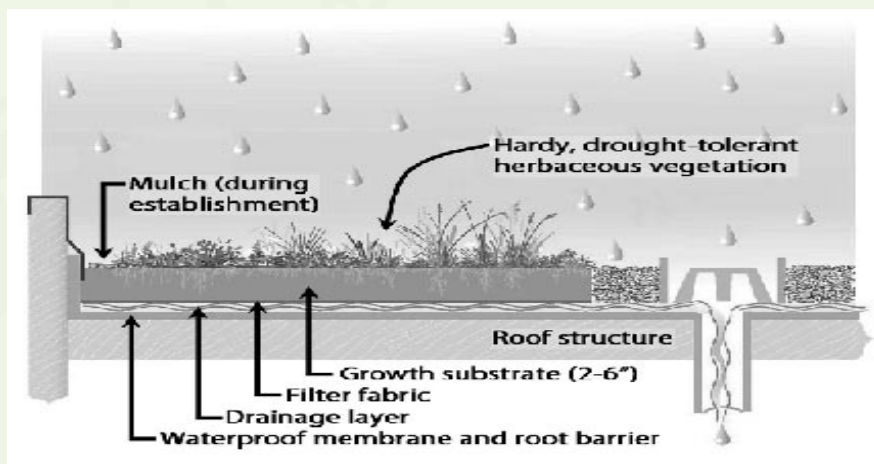
Greenroofs provide numerous environmental and economic benefits. The main focus of their use in Metro is the benefit to stormwater.

Environmental Benefits

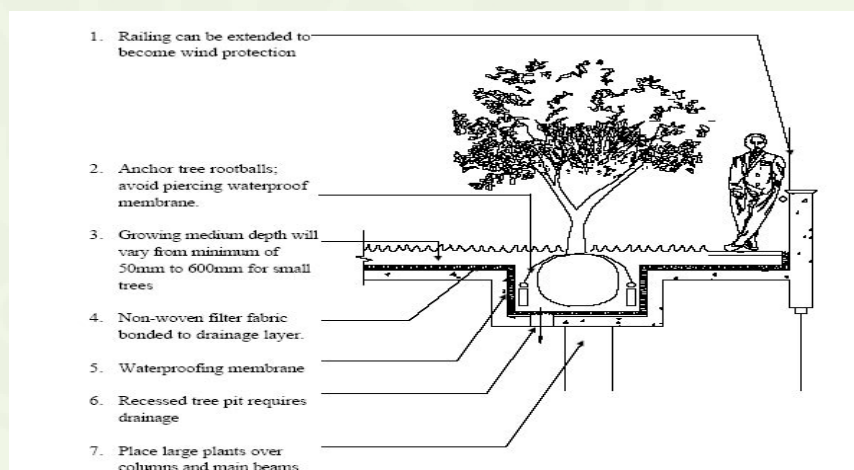
The vegetated roof covers provide various stormwater benefits. Because greenroofs are permeable surfaces, they slow runoff - attenuating the peak runoff rate, retain water - reducing runoff volumes from the roof, and filter stormwater for improved water quality. In addition, there are environmental benefits such as improving air quality (cleaning fine, airborne particles from the air), cooling buildings (reducing the urban heat island effect), and providing habitat for various types of plants and animals.



Example: Greenroof



(Source: Massachusetts Low Impact Development Toolkit)
Extensive Greenroof (4 to 6 inches of growth medium)



(Source: Public Works and Government Services Canada, 2002)
Intensive Greenroof (6 to 24 inches of growth medium)



GREENROOFS: Stormwater Best Management Practice

-Kimberly Moore

continued

Economic Benefits

Greenroofs prolong roof life by reducing temperature fluctuations on rooftops, thus reducing the stress caused by expansion and contraction of roofing materials and supports in variable temperatures. In addition, greenroofs provide insulation to buildings, which reduces heating and cooling costs. The vegetation itself cools the rooftop as well. An accessible greenroof can increase the unit value of apartments, condominiums, or office space.

When greenroofs are being designed there are several key factors that must be considered:

- Good waterproofing material and installation are essential.
- Materials used must be lightweight.
- Building structure must be able to support saturated weight.
- Roofs with moderate to flat slopes are most appropriate. Maximum roof slope of 15%.

The components of a greenroof for proper functioning are as follows:

- Vegetation selected for its ability to thrive in rooftop climate.
- Engineered planting medium, not soil, typically composed of expanded clay or a mixture of clay and other materials.
- Filter layer.
- Containment (in modular systems refers to plant containers; in non-modular systems refers to barriers at roof perimeter and drainage structures).
- Drain layer, sometimes with built-in water reservoirs.
- Water proofing layer or roof membrane with root repellent.

Although greenroofs may currently be a limited permanent treatment practice, Metro anticipates the concept and functionality of greenroofs will expand with development in Nashville and Davidson County. The functionality of greenroofs will grow as a best management practice to meet water quality standards.

For more information contact:

Rebecca Dohn or Kimberly Moore
METRO Water Services
Stormwater Division - NPDES
(615) 880-2420

Local Statistics:

Middle Tennessee Chapter Members	129
Middle Tennessee Accredited Professionals	147
Middle Tennessee Certified Projects	2

Would you like to:

- be a member?
- be an accredited professional?
- register and certify your building?

Visit us at www.usgbc.org/chapters/middletennessee/

“Building Toward a Sustainable Future” An Evening with William McDonough 7:00 p.m. Tuesday, September 26, 2006 Benton Chapel on the campus of Vanderbilt University FREE

A delightfully diverse, safe, healthy, and just world, with clean air, soil, water, and power -- economically, equitably, ecologically, and elegantly enjoyed.” Helping to create such a world is the goal of William McDonough, an internationally renowned architect, designer, consultant, and co-author of “Cradle to Cradle: Remaking the Way We Make Things”. McDonough visits Nashville in September and will speak at Vanderbilt on Tuesday, September 27, 7:00 p.m., in Benton Chapel. This event, which is free to the public, is a wonderful opportunity to learn more about how we can create a world in which human health, the environment, and economies thrive together. Our USGBC chapter is one of many sponsors of this program. Please make plans to attend and to invite and engage key colleagues and customers in this critical conversation. Visit <http://www.tnfund.org/events> for more information about the event. Visit www.mcdonough.com and www.mcdonoughpartners.com to learn more about McDonough and his work.

Here’s more about McDonough from “Born Again”, an article by Jim Robbins in the Jan-Feb 2005 issue of Conservation in Practice:

“William Mc-Donough (is) an environmental radical who has been adopted by the titans of industry. The former dean of the University of Virginia School of Architecture, he is now the head of a 30-person architecture firm and a product design firm, both in downtown Charlottesville, Virginia. He has designed highly touted green corporate headquarters for furniture manufacturer Herman Miller and for clothing chain The Gap. He is designing the European headquarters for Microsoft. He has a completely recyclable car on the drawing board for Ford. His client base has over 1 trillion dollars in annual revenue, and he is advising the likes of William Ford, Jr., and Warren Buffett on adopting his cradle-to-cradle philosophy. All of this happens because he understands their needs. They can continue to grow, enhance their profits, reduce regulation and liability, and become pollution free if they play by the rules-of nature.

“Has McDonough found the perfect marriage between environmentalism and business? In addition to laudatory statements from the corporate world, McDonough has been hailed as a hero of the planet by Time magazine and was named Designer of the Year in 1999 by Interiors magazine. Presidents George W. Bush and Bill Clinton have given him top awards for sustainability. Many environmentalists also find that there is much to like in what McDonough says. Just like his corporate clients, they describe him as a genius, one of the most original environmental thinkers in a long time.”

Ann Olsen



Building Toward a Sustainable Future

An Evening with **WILLIAM McDONOUGH**

ARCHITECT ✦ ENVIRONMENTALIST ✦ CAPITALIST
DESIGNER ✦ TEACHER ✦ VISIONARY

SEPTEMBER 26, 2006
Public Lecture ✦ 7:00 p.m.
Benton Chapel, Vanderbilt

Overflow seating is available in
Vanderbilt Law School's Flynn
Auditorium. Please visit www.tnfund.org
for links to maps and directions.

Co-hosted by:
Middle Tennessee Regional Environmental Forum • The Tennessee Fund for Sustainability •
Vanderbilt University

With generous support from:
Hastings Architecture Associates, LLC • Montgomery Bell Academy

Additional support from:
AIA Middle Tennessee Chapter • AIA Tennessee • AIGA Nashville • The Atticus Trust • Cold
Feet Creative • Corrections Corporation of America • Crosland Inc. • Cumberland Region
Tomorrow • Cumberland River Compact-Building Outside the Box • Encore Condominiums
by Novare Group • Harwell Howard Hyne Gabbert & Manner, P.C. • Hawkins Partners, Inc. •
The Land Trust for Tennessee • The Mathews Company • Nashville Civic Design Center •
NAIOP-Nashville • Nashville Cultural Arts Project at Neuhoff • Ray Bell Construction •
Seigenthaler Public Relations • Smith Seckman Reid, Inc. • Southern Alliance for Clean
Energy • Sites & Harbison, PLLC for the Environmental Law Section of the Tennessee Bar
Association • Struever Bros. Eccles & Rouse, Inc. • Tennessee Department of Environment
and Conservation • Tennessee Department of Transportation • Turner Universal • US Green
Building Council-Middle Tennessee Chapter • Waller Lansden Dortch & Davis, PLLC •
World Wildlife Fund-Southeast Rivers and Streams Program

The Vanderbilt Center for the Study of Religion and Culture's Project on Ecology and
Spirituality in America • Vanderbilt Center for Environmental Management Studies

William A. McDonough, FAIA

William McDonough is an internationally renowned designer and one of the primary proponents and shapers of what he and his partners call 'The Next Industrial Revolution.' *Time* magazine recognized him in 1999 as a 'Hero for the Planet', stating that "his utopianism is grounded in a unified philosophy that—in demonstrable and practical ways—is changing the design of the world." Since becoming in 1996 the first and only individual to receive the Presidential Award for Sustainable Development, the nation's highest environmental honor, Mr. McDonough earned the U.S. EPA Presidential Green Chemistry Challenge Award as a member of the EcoWorx™ development team for Shaw Industries. Most recently, he received the National Design Award for exemplary achievement in the field of environmental design. Presented annually by the Smithsonian's Cooper Hewitt, National Design Museum, an award recognizing "excellence, innovation and lasting achievement."

Mr. McDonough is principal of MBDC, a product and systems development firm assisting prominent client companies in designing profitable and environmentally intelligent solutions. He is also the founding principal of William McDonough + Partners, Architecture and Community Design, an internationally recognized design firm practicing ecologically, socially, and economically intelligent architecture and planning in the U.S. and abroad.

Mr. McDonough is an Alumni Research Professor at the University of Virginia's Darden Graduate School of Business Administration, and Consulting Professor of Civil and Environmental Engineering at Stanford University. He also serves as U.S. Chairman and member of the Board of Councilors of the China-U.S. Center for Sustainable Development and Chairman of the Board of Overseers for the Center for Eco-Intelligent Management at the Instituto de Empresa in Madrid. He recently joined the Board of the H. John Heinz Center for Science, Economics and the Environment and the Management Committee of HRH The Prince of Wales's Business & The Environment Programme at Cambridge University. From 1994-1999, Mr. McDonough was the Edward E. Elson Professor of Architecture and Dean of the School of Architecture at the University of Virginia.

MBDC assists clients in profitably implementing its scientifically based design approach to create solutions that are prosperous economically, socially, and environmentally. Recent MBDC projects include designing materials for shoes with Nike, fibers with Honeywell, furniture with Herman Miller, fabrics with Steelcase, carpet



with Shaw Industries, and transportation-related products with Ford Motor Company.

William McDonough + Partners has been a leader in the sustainable development movement since 1977. The design of the Environmental Defense Fund offices, completed in 1985, helped launch the 'green building' movement. Recent award-winning projects for Gap Inc., Nike, Herman Miller, and Oberlin College have set new standards for design quality, environmental sensitivity, and functional effectiveness. WM+P won Business Week/Architectural Record "Good Design is Good Business" awards for large commercial projects during both of the awards program's first two years.

Mr. McDonough's leadership in sustainable development is recognized widely, both in the U.S. and internationally, and he has written and lectured extensively on his design philosophy and practice. He was commissioned in 1991 to write *The Hannover Principles: Design for Sustainability* as guidelines for the City of Hannover's EXPO 2000, and in 1993 to give the Centennial Sermon at the Cathedral of St. John the Divine in New York City. More recently, Mr. McDonough and Michael Braungart co-authored *Cradle to Cradle: Remaking the Way We Make Things*, published in 2002 by North Point Press and now translated in four languages. The two were also the subject of a 2001 documentary video, *The Next Industrial Revolution*, from Earthome Productions.

The Middle Tennessee Chapter of the U.S. Green Building Council invites you
to join us at

The First Annual
Green Tie Gala

Thursday October 26, 2006
6:30 pm- 9:00 pm
City Hall
405 12th Ave. South
Nashville

Cocktails, Entertainment, and Dinner

Keynote Speaker

Rick Fedrizzi

U.S.G.B.C. founding Chairman and current President and CEO

Help us promote Leadership in Energy and Environmental Design (LEED)
in our community through your support of the local chapter of the
U.S. Green Building Council, a not-for-profit organization.

Tickets are \$100 each

Formal attire encouraged

R.S.V.P. by mailing in this form with payment by October 1 to:

Green Tie Gala

U.S.G.B.C. Middle TN Chapter

P.O. Box 111211

Nashville, TN 37222-1211

For more information, visit www.usgbc.org/chapters/middletennessee

Name: _____

Email: _____

No. of guests in your party: _____

No. of vegetarian meals: _____





Green Tie Gala Levels of Participation

The Middle Tennessee Chapter of the U.S. Green Building Council is seeking sponsors to assist in the funding of Chapter activities. Sponsorship funds will be used to subsidize food, venue, and other related costs for the Green Tie Gala to be held in October of 2006.

From least to greatest amount, Green Tie Gala incentives include:

“\$200 Gala Contributor”

-sponsor name will be included on a banner during the event

“\$500 Gala Green Sponsor”

-sponsor name will be included on a banner during the event

“\$1000 Gala Gold Sponsor”

-sponsor name on banner

-sponsorship includes a table, inclusive of seating for 8 people total.

“\$1000 Gala Gold Centerpiece Sponsor”

-sponsor name on banner

-sponsorship includes company name on business card-sized label on each table centerpiece*

(*sponsor name placement on centerpiece not to conflict with sponsored table sponsor information. Creation and placement of label to be at the discretion of USGBC – Middle TN Green Tie Gala committee)

“\$5000 Gala Title Sponsor”

-sponsor name on banner

-sponsorship includes a table, inclusive of seating for 8 people total.

-sponsor name included in the title of the event

New levels of sponsorship just added:

*Note: these levels do not include mention on the banners at the Green Tie gala

Gala Newsletter Sponsorships: Advertisements in USGBC- Middle Tennessee Chapter newsletter, published monthly.

- | | | |
|----------------------------|---------------------------|------------------------------|
| • Business Card ad: | \$50/issue for members; | \$100/issue for non members |
| • Quarter page ad: | \$100/ issue for members; | \$150/ issue for non members |
| • Half page ad: | \$150/ issue for members; | \$200/ issue for non members |
| • Full page ad: | \$200/ issue for members; | \$300/ issue for non members |



Green Tie Gala Sponsorship Pledge

I hereby pledge, on behalf of _____ <company name> _____,
a _____ <sponsorship level> _____ sponsorship in the amount of \$ _____ <####> _____
to the USGBC Middle Tennessee Chapter's Green Tie Gala event, to be held on Thursday,
October 26, 2006.

I understand that this sponsorship entitles the sponsoring company to the benefits as listed in the attached
"levels of participation" for the 2006 Green Tie Gala event as associated with the appropriate level of
sponsorship.

The full amount of this sponsorship as pledged will be submitted to the USGBC Middle Tennessee chapter
at the address listed below by no later than October 1, 2006.

USGBC – Middle Tennessee Chapter
GREEN TIE GALA
PO Box 111211
Nashville, TN 37222-1211

This pledge letter, once signed, serves as both contract and invoice for the sponsorship described herein.
A copy of this pledge letter shall be submitted via fax to the Middle Tennessee Chapter prior to September
30, 2006 to the attention of Anne Barronton at 615.333.9980.

Sponsor Representative and Title

Date



LEED for New Construction Technical Review Workshop

Certification Requirements and Process

Are you ready to enter the rapidly growing green building market?

Attend the **LEED® for New Construction and Major Renovations Technical Review Workshop** presented by the U.S. Green Building Council. Gain the knowledge needed to maximize building performance, achieve LEED certification and take the LEED Professional Accreditation Exam.

WHY LEARN ABOUT LEED?

Ask any of the 3000 building owners seeking LEED certification right now. Owners and developers are demanding green buildings that save money while protecting the environment and occupant health. The USGBC's LEED Rating System™ is the nationally recognized rating system for green buildings. LEED is already being used by green building projects in all 50 states, and the market continues to grow.

WHO SHOULD ATTEND?

Industry professionals seeking to increase their understanding of the LEED for New Construction Rating System and green building strategies, benefits and resources:

- Architects
- Designers
- Consultants
- Owners
- Engineers
- Developers
- Contractors
- Manufacturers

WHAT'S COVERED

- LEED for New Construction and Major Renovations:
 - Technical requirements
 - Certification process
 - Project case studies and strategies
- Green building costs and benefits
- Available tools and resources

CONTINUING EDUCATION CREDITS AVAILABLE



HOST



October 19, 2006
8:30 am – 5:00 pm
Memphis, TN

Springhill Suites by Marriott
Kress Ballroom
21 North Main St
Memphis, TN 38103

FACULTY

USGBC workshops are conducted by the top green building practitioners in the country. The following instructors are currently scheduled for this workshop (subject to change):

Sue Barnett
TBD

REGISTRATION

To register for this or any USGBC workshop, visit
www.usgbc.org/workshops/register

FEES	USGBC MEMBERS*	NON- MEMBERS
Early	\$325	\$425
Late (begins 10/12/06)	\$355	\$475
Students NEW! (FULL-TIME STUDENTS ONLY)	\$150 (limited availability)	

For info on student rates and all workshop inquiries, contact workshop@usgbc.org or call 202-742-3820.

Fee Includes:

- Online access to LEED for New Construction Reference Guide and a discounted price on the print edition (\$125 + S&H) when purchased at registration
- Educational handouts
- Continental breakfast, lunch and refreshment breaks

Join USGBC today and start saving!

Members receive discounted rates on all workshop offerings and reference materials.

**Attendees whose firms are national members of USGBC.*